REMARKS

Applicant is in receipt of the Office Action mailed August 5, 2002. Claims 1-70 and 95-122 were pending. Claims 4, 39 and 47 – 57 have been cancelled. Thus claims 1-3, 5-38, 40-46, 58-70, and 95-122 are currently pending.

Objection to the Title

The Office Action stated that the title of the invention was not descriptive. Applicant submits herewith a new title to overcome the objection.

§102 and 103 Rejections

Claims 1-3 and 26 were rejected under §102(b) as being anticipated by Dawson. Claims 31, 35 and 37 were rejected under §102(b) as being anticipated by Pelanek et al. Claims 4-18, 27-30 and 95-122 were rejected under §103 as being unpatentable over Dawson in view of Pelanek et al. Claims 32-34, 36, 38-46 were rejected under §103 as being unpatentable over Pelanek et al. in view of Dawson. Claims 19-25 and 47-70 were rejected under §103 as being unpatentable over Dawson in view of Canfield.

Claims 1, 31, 33, 35 and 37

Applicant has amended claim 1 to include the limitation of claim 4, and claim 4 has been cancelled. Original claim 4 was rejected under §103 over Dawson in view of Pelanek. The Office Action stated that "Dawson does not specifically disclose address range and/or a data type of the data. Polanek discloses address range and/or a data type of the data ..." Applicant respectfully submits that the Polanek et al. reference does not teach or suggest the elements missing from Dawson. The Polanek reference is directed toward a compact disk that has a first storage area which stores lossless compressed digital medical images, and a second storage area which stores lossy compressed digital medical images. Polanek teaches that "where a case study or set of medical images is of such a length that more than one CD is required to record all of the losslessly compressed digital medical images, each CD records the entire set of lossy compressed digital medical images.

Claim 1 as amended recites as follows:

1. (Amended) A method for storing data in a memory in a computer system, the method comprising:

receiving uncompressed data;

determining a compression mode for the data, wherein the compression mode comprises one of lossless compression, lossy compression, or no compression;

wherein the compression mode is determined in response to one or more of: a requesting agent which provides the data; an address range where the data is stored; and/or a data type of the data;

selectively compressing the uncompressed data, wherein said compressing is selectively performed in response to the compression mode for the data; and

storing the data in the memory.

Thus, claim 1 recites that the compression mode is determined in response to one or more of a requesting agent which provides the data, and address range where the data is stored, and a data type of the data. Applicant respectfully submits that the Pelanik et al. reference does not disclose any of these limitations.

Pelanik discloses that medical images may be compressed in a lossless or lossy fashion <u>based on whether the set of medical images would fit on a single CD or not</u>. Pelanik et al. teaches that different storage areas of a compact disk may store lossless and lossy compressed images. <u>However, Pelanik does not teach that the compression mode of the images is determined in response to an address range of where the data is to be stored</u>. Rather, the Pelanik et al. reference determines whether to use lossy or lossy compression based on whether the set of images will fit on the CD or not, and then simply stores lossy and lossless compressed images in different storage areas. Thus, Applicant submits that the Pelanik et al. reference does not teach or suggest this limitation of claim 1. The Pelanik et al. reference also does not teach any type of determination of compression mode based on data type of the data. In the Pelanik et al. reference, all images have the same data type, i.e., all of the data being compressed in Pelanik et al. comprise digital medical images. Thus, Pelanik only determines the compression mode for data based on whether resulting data will fit on a single compact disk. Pelanik does not disclose any type of determination of compression mode based on address range where the data is to be stored, data type of the data, and/or a requesting

agent. Thus, Applicant submits that claim 1 as amended and those dependent thereon are allowable.

Applicant submits that independent claims 31, 33, 35 and 37 and the claims dependent thereon are allowable for at least the reasons given above with respect to amended claim 1.

Claims 26 and 70

Claim 26 was rejected under §102 as being anticipated by Dawson. Claim 26 recites as follows:

> 26.   A computer system utilizing compressed storage of data, the computer system comprising:
> a CPU;
>
> system memory which stores data used by said CPU for executing one or more applications, wherein the system memory also stores an operating system;
>
> a memory controller coupled to said system memory and said CPU, wherein said memory controller performs memory control functions for said system memory, wherein said memory controller includes a compression/decompression engine comprised in said memory controller for compressing and decompressing data transferred to or from said system memory;
>
> wherein the memory controller is operable to:
> receive uncompressed data;
> determine a compression mode for the data, wherein the compression mode comprises one of lossless compression, lossy compression, or no compression;
> selectively compress the uncompressed data, wherein said compressing is selectively performed in response to the compression mode for the data; and
> store the data in the memory.

Thus, claim 26 recites a system memory which stores data used by a CPU for executing one or more applications. Claim 26 also recites a memory controller coupled to the system memory which performs memory control functions for the system memory, wherein the memory controller includes a compression/decompression engine. Applicant respectfully submits that Dawson does not teach or suggest these limitations. Rather,

Dawson is directed toward image compression for images only. The Dawson reference is not directed at all toward any type of "data used by a CPU for executing one or more applications." Further, Dawson does not teach or suggest a memory controller which includes a compression/decompression engine, and which performs the operations outlined in claim 26. Thus, Applicant submits that claim 26 is allowable.

Applicant notes that claim 27 was rejected under §103 as being unpatentable over Dawson in view of Pelanek et al. using the rationale given with respect to claim 4. Applicant submits that claim 27 is allowable for at least the reasons given above with respect to amended claim 1.

Applicant submits that claim 70 is allowable for at least the reasons given above with respect to claim 26.

Claims 58 - 70

Claims 58-70 were rejected under §103 as being unpatentable over Dawson in view of Canfield. Claim 58 recites as follows:

> 58. A method for compressing data and storing the compressed data in a memory in a computer system, the method comprising:
> receiving uncompressed first data;
> compressing the uncompressed first data to produce compressed first data, wherein said compressed first data has a first size;
> determining if the first size of the compressed first data is greater than an allocated memory block size of a first allocated memory block;
> creating a header, wherein the header includes an overflow indicator indicating whether the first size of the compressed first data is greater than the allocated memory block size; and
> storing the compressed first data and the header in the memory.

Thus, claim 58 includes steps of "determining if the first size of the compressed first data is greater than an allocated memory block size of a first allocated memory block"; and "creating a header, wherein the header includes an overflow indicator indicating whether the first size of the compressed first data is greater than the allocated memory block size." Applicant respectfully submits that none of the cited references teach or suggest these steps. More specifically, none of the cited references teach or suggest the notion of an overflow indicator which indicates whether a size of compressed data is greater than an

allocated memory block size. Thus, Applicant submits that claim 58 and those dependent thereon are allowable.

Claims 95, 107 and 109

Claim 95 recites a method for compressing data which includes "allocating a memory block, wherein the memory block is allocated for uncompressed data" and further includes the step of "storing compressed first data in the allocated memory block." In other words, claim 95 recites a method of storing compressed data in a memory block that was allocated for uncompressed data. This may provide for reduced latency in memory storage at the expense of possible wasted memory. Applicant submits that the cited prior art does not teach or suggest this limitation, i.e., Applicant respectfully submits that the prior art does not teach or suggest storing compressed data in a memory block that has been allocated for uncompressed data. Thus, Applicant submits that claim 95 and those dependent thereon are allowable.

Applicant submits that claim 107 is allowable for at least the reasons given above with respect to claim 95. Claim 107 recites a method whereby an operating system allocates a memory block for uncompressed data; compressed data is then stored in this allocated memory block without any type of address translation; and further that the operating system does not account for this compression operation. Applicant respectfully submits that these limitations are not taught or suggested in the prior art.

Applicant submits that claim 109 and those dependent thereon are allowable for at least the reasons given above with respect to claim 95.

Claim 119

Claim 119 recites a method for compressing and storing compressed data which includes "allocating a memory block, when the memory block is allocated according to a predetermined compression ratio." Applicant respectfully submits that this limitation is not taught or suggested in the prior references. Thus, Applicant submits that claim 119 and those dependent thereon are allowable.
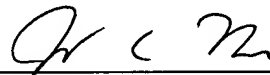
CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Conley, Rose, & Tayon, P.C. Deposit Account No. 50-1505/5143-01700/JCH.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

☐ Request for Approval of Drawing Changes

☐ Notice of Change of Address

☐ Check in the amount of $ for fees (   ).

☐ Other:

Respectfully submitted,

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Amendments to Claims with Changes Highlighted

1. (Amended) A method for storing data in a memory in a computer system, the method comprising:

receiving uncompressed data;

determining a compression mode for the data, wherein the compression mode comprises one of lossless compression, lossy compression, or no compression;

wherein the compression mode is determined in response to one or more of: a requesting agent which provides the data; an address range where the data is stored; and/or a data type of the data;

selectively compressing the uncompressed data, wherein said compressing is selectively performed in response to the compression mode for the data; and

storing the data in the memory.

37. (Amended) A method for storing data in a memory in a computer system, the method comprising:

receiving uncompressed data;

determining a compression mode for the data, wherein the compression mode is determined in response to one or more of a requesting agent which provides the data; an address range where the data is stored; and/or a data type of the data;

selectively compressing the uncompressed data, wherein said compressing is selectively performed in response to the compression mode for the data; and

storing the data in the memory.